

What is claimed is:

1. A level adjustment method applicable to an audio processing apparatus having a plurality of amplifiers corresponding to three or more of input channels of an audio signal for amplifying signal levels of the respective input channels, the level adjustment method comprising:

a group arrangement process of arranging the plurality of the input channels into one or more group; and

a group control process of controlling each group such as to decrease an amplification rate of all the amplifiers corresponding to the input channels belonging to the same group as a maximal one of the signal levels of the input channels belonging to the same group increases.

2. The level adjustment method according to claim 1, wherein the group arrangement process is applied to an audio signal of a surround system having at least six input channels including a left channel, a right channel, a left surround channel, a right surround channel, a center channel and an LFE channel.

3. The level adjustment method according to claim 2, wherein the group arrangement process arranges all of the left channel, the right channel, the left surround channel, the right surround channel, the center channel and the LFE channel into one group.

4. The level adjustment method according to claim 2, wherein the group arrangement process arranges the input channels into a first group including the left channel, the right channel, the left surround channel, the right surround channel and the center channel, and a second group including the LFE channel.

5. The level adjustment method according to claim 2, wherein the group arrangement process arranges the input channels into a first group including the left channel, the right channel and the center channel, a second group including the left surround channel and the right surround channel, and a third group including the LFE channel.

6. The level adjustment method according to claim 2, wherein the group arrangement process arranges the input channels into a first group including the left channel and the right channel, a second group including the left surround channel and the right surround channel, a third group including the LFE channel, and a fourth group including the center channel.

7. The level adjustment method according to claim 1, further comprising a band separation process of separating the respective input channels into a plurality of frequency bands, so that the group arrangement process and the group control process are applied to a respective one of the frequency bands.

8. The level adjustment method according to claim 1, wherein the group control process comprises a detection process of detecting the maximal one of the signal levels of the input channels belonging to the same group, and an adjustment process of adjusting the amplification rate of all the amplifiers involved in the same group according to the detected maximal signal level such as to decrease the amplification rate as the maximal signal level increases.

9. The level adjustment method according to claim 8, wherein the detection process further comprises a sample and hold process of successively sampling absolute values of the signal level of each input channel for a predetermined period and holding a greatest one of the sampled absolute values, so that the sampled and held greatest absolute value represents the signal level of the input channel.

10. The level adjustment method according to claim 9, wherein the detection process detects a maximal one of the respective greatest absolute values sampled and held for the respective input channels of the same group, thereby determining the maximal signal level.

11. The level adjustment method according to claim 8, wherein the adjustment process checks whether the maximal signal level of each of the groups exceeds a predetermined

threshold level, and, when the maximal signal level of the group exceeds the threshold level, decreases the amplification rate of the group according to the excess amount.

12. The level adjustment method according to claim 11, wherein the adjustment process operates when the maximal signal level does not exceed the threshold level for maintaining a predetermined amplification rate, and operates when the maximal signal level exceeds the threshold level for decreasing the predetermined amplification rate by a predetermined factor.

13. The level adjustment method according to claim 12, wherein the adjustment process smoothens a transition of the amplification rate around the threshold level according to a predetermined knee parameter.

14. The level adjustment method according to claim 8, wherein the group control process includes a response control process of controlling a response of the adjusting of the amplification rate relative to the detecting of the maximal signal level according to predetermined attack and release parameters.

15. An audio processing apparatus comprising:
a plurality of amplifiers corresponding to three or

more of input channels of an audio signal for amplifying signal levels of the respective input channels;

a group arrangement section for arranging the plurality of the input channels into one or more group; and
a group control section for controlling each group such as to decrease an amplification rate of all the amplifiers corresponding to the input channels belonging to the same group as a maximal one of the signal levels of the input channels belonging to the same group increases.

16. A level adjustment program for use in an audio processing apparatus having a processor and a plurality of amplifiers corresponding to three or more of input channels of an audio signal for amplifying signal levels of the respective input channels, the level adjustment program being executable by the processor for causing the audio processing apparatus to perform:

a group arrangement process of arranging the plurality of the input channels into one or more group; and
a group control process of controlling each group such as to decrease an amplification rate of all the amplifiers corresponding to the input channels belonging to the same group as a maximal one of the signal levels of the input channels belonging to the same group increases.

17. A graphic user interface installed in an audio processing apparatus having a plurality of amplifiers

corresponding to three or more of input channels of an audio signal for amplifying signal levels of the respective input channels, the graphic user interface being designed for assisting the audio processing apparatus in performing a level adjustment method comprising a group arrangement process of arranging the plurality of the input channels into one or more group, and a group control process of controlling each group such as to decrease an amplification rate of all the amplifiers corresponding to the input channels belonging to the same group as a maximal one of the signal levels of the input channels belonging to the same group increases, wherein the graphic user interface provides:

a visual symbol prompting the user to select desired grouping of the input channels at the group arrangement process; and

another visual symbol prompting the user to input parameters effective to determine how the amplification rate is decreased according to the maximal signal level during the group control process.

18. The graphic user interface according to claim 17, wherein the parameters include a threshold parameter and a knee parameter, such that the group control process decreases the amplification rate when the maximal signal level exceeds a threshold level determined by the threshold parameter, and smoothens a transition of the amplification rate around the threshold level according to the knee parameter.